Claims

What is claimed is

1. A method of making a medical device comprising a coated piece wherein the coated piece comprises a coating, which optionally comprises a polymer or polymer combination and drug(s), wherein the method comprises:

    a) adjusting the temperature of the coating to a target temperature followed by a crimping step;

    b) adjusting the temperature of the coating to a target temperature during a crimping step;

    c) adjusting the temperature of the coating to a target temperature and maintaining the temperature of the coating within plus or minus 5°C of the target temperature during a crimping step;

    d) adjusting the temperature of the coating to a target temperature followed by crimping such that the temperature of the coating remains within plus or minus 10°C of the target temperature during a crimping step; or

    e) adjusting the temperature of the coating to a temperature other than ambient towards a target temperature and continuing to adjust the temperature of the coating towards the target temperature during a crimping step.

2. The method of Claim 1 wherein the crimping step comprises the steps of closing the crimper, adjusting the temperature of the coating to a second temperature, and opening the crimper wherein the second temperature is greater than or less than target temperature.

3. The method of Claim 1 wherein the device further comprises a catheter and wherein the crimping step attaches the coated piece to the catheter.

4. The method of Claim 1 wherein the coating comprises a polymer or polymer combination.

5. The method of Claim 4 wherein the polymer or polymer combination comprises a polymer with Tg below ambient temperature.

6. The method of Claim 4 wherein the polymer or polymer combination comprises a polymer with Tg above ambient temperature.

7. The method of Claim 4 wherein the polymer or polymer combination comprises a polymer that is one of or any combination of poly(ester amides); ABS resins; acrylic polymers and acrylic copolymers; acrylonitrile-styrene copolymers; alkyd resins; cellulose ethers; celluloses; copoly(ether-esters); copolymers of polycarboxylic acids and poly-hydroxycarboxylic acids; copolymers of vinyl monomers with each other and olefins; cyanoacrylates; epoxy resins; ethylene vinyl alcohol copolymer; ethylene-α-olefin copolymers; ethylene-methyl methacrylate copolymers; ethylene-vinyl acetate copolymers; poly(amino acids); poly(anhydrides); poly(imino carbonates); poly(iminocarbonate); poly(orthoesters); poly(tyrosine arylates); poly(tyrosine derive carbonates); polyacrylates; polyacrylic acid; polyacrylic acids; polyacrylonitrile; polyalkylene oxalates; polyamides; polyamino acids; polyanhydride; polyanhydrides; polycarbonates; polycarboxylic acids; polycyanoacrylates; polyesters; polyethers; poly-hydroxycarboxylic acids; polyimides; polyisobutylene and ethylene-α-olefin copolymers; polyketones; polymethacrylates; polyolefins; polyorthoester; polyorthoesters; polyoxymethylenes; polyphosphazenes; polyphosphoester; polyphosphoester urethane; polyphosphoesters; polyphosphoesters-urethane; polyurethane; polyurethanes; poly(ether-urethanes), poly(ester-urethanes), poly(silicone-urethanes), polyvinyl alcohol; polyvinyl aromatics; polyvinyl esters; polyvinyl ethers; polyvinyl ketones; poly(vinylidene fluoride), poly(vinylidene chloride), poly(vinylidene fluoride-co-hexafluoropropene), poly(vinylidene fluoride-co-chlorotrifluoroethylene), poly(vinyl fluoride), poly(vinyl chloride), polyvinylidene halides; silicones; starches; vinyl copolymers vinyl-olefin copolymers; vinyl halide polymers and copolymers; and vinyl halide polymers vinyl halide polymers copolymers

8. The method of Claim 4 wherein the polymer or polymer combination comprises a polymer that is one of or any combination of starch, sodium alginate, rayon-triacetate, rayon, polyvinylidene fluoride, polyvinylidene chloride, polyvinyl pyrrolidone, polyvinyl methyl ether, polyvinyl chloride, polyvinyl acetate, polystyrene, polyisocyanate, polyisobutylene, polyethylene glycol, polydioxanone, polycaprolactone, polycaprolactam, polyacrylonitrile, poly(trimethylene carbonate), poly(L-lactic acid), poly(lactide-co-glycolide), poly(hydroxyvalerate), poly(hydroxybutyrate-co-valerate), poly(hydroxybutyrate-co-hydroxyvalerate), poly(hydroxybutyrate), poly(glycolide), poly(glycolic acid), poly(D,L-lactide-co-L-lactide), poly(D,L-lactide-co-glycolide), poly(D,L-lactide), poly(4-hydroxybutyrate), poly(3-hydroxybutyrate), poly(3-hydroxy valerate), Nylon 66, hyaluronic acid, fibrinogen, fibrin, elastin-collagen, collagen, cellulose propionate, cellulose nitrate, cellulose butyrate, cellulose acetate butyrate, cellulose acetate, cellulose, cellophane, carboxymethyl cellulose, or poly(2-hydroxyethyl methacrylate).

9. The method of Claim 1 wherein the coated piece is selected from self-expandable stents, balloon-expandable stents, and stent-grafts.

10. The method of Claim 1 wherein the coating comprises drug(s) selected from antiproliferative, antineoplastic, antiinflammatory, antiplatelet, anticoagulant, antifibrin, antithrombin, antimitotic, antibiotic, antioxidants, or their combinations.

11. The method of Claims 1-10 wherein the target temperature is

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

c) below ambient temperature;

d) below room temperature;

e) above ambient temperature;

f) above room temperature;

g) at or below -40 °C;

h) between ambient temperature and upper Tg of the Tg range;

i) between ambient temperature and lower Tg of the Tg range;

j) between -40 °C and upper Tg of the Tg range;

k) between -40 °C and lower Tg of the Tg range;

l) between -40 °C and ambient temperature;

m) at or above 80 °C;

n) between 80 °C and upper Tg of the Tg range;

o) between 80 °C and lower Tg of the Tg range; or

p) between 80 °C and ambient temperature.

12. The method of Claim 11 wherein the target temperature is limited to a temperature below the temperature at which therapeutic agents present in the coating substantially decompose.

13. The method of Claim 11 wherein the target temperature is limited to a temperature below the temperature at which drug(s) present in the coating become substantially unsatisfactory for their intended use.

14. The method of Claim 11 wherein the target temperature is chosen to simultaneously minimize deformation- and delamination-based failure during crimping.

15. The method of Claim 11 wherein Tg range of the polymer or polymer combination excludes ambient temperature.

16. The method of Claim 11 wherein Tg range of the polymer or polymer combination excludes ambient temperature plus or minus 1°C.

17. The method of Claim 11 wherein Tg range of the polymer or polymer combination excludes ambient temperature plus or minus 5°C.

18. The method of Claim 11 wherein target temperature is chosen to yield a change in shore hardness wherein:

a) the change is plus 50%; or

b) the change is minus 50%.

19. The method of Claim 18 wherein:

a) the change is plus 20%; or

b) the change is minus 20%.

20. The method of Claim 11 wherein the target temperature is

a) for polymers which have a shore hardness of 60A to 80D; predominately exhibit deformation-based failures during crimping; have a Tg above room temperature; or have a Tg above ambient temperature:

i) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

ii) below ambient temperature;

iii) below room temperature;

iv) at or below -40 °C;

v) between ambient temperature and upper Tg of the Tg range;

vi) between ambient temperature and lower Tg of the Tg range;

vii) between -40 °C and upper Tg of the Tg range;

viii) between -40 °C and lower Tg of the Tg range;

ix) between -40 °C and ambient temperature;

b) for polymers which have a shore hardness of 60D to 95D; predominately exhibit delamination-based failure during crimping; have a Tg above room temperature; or have a Tg below ambient temperature:

i) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

ii) above ambient temperature;

iii) above room temperature;

iv) at or above 80 °C;

v) between 80 °C and upper Tg of the Tg range;

vi) between 80 °C and upper Tg of the Tg range;

vii) between 80 °C and lower Tg of the Tg range;

viii) between 80 °C and lower Tg of the Tg range; or

ix) between 80 °C and ambient temperature.

21. The method of Claim 20 wherein for polymers that have a shore hardness of 60A to 80D the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between -40 °C and upper Tg of the Tg range;

h) between -40 °C and lower Tg of the Tg range;

i) between -40 °C and ambient temperature;

22. The method of Claim 20 wherein for polymers that have a shore hardness of 60D to 95D the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between 80 °C and upper Tg of the Tg range;

h) between 80 °C and lower Tg of the Tg range; or

i) between 80 °C and ambient temperature.

23. The method of Claim 20 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between -40 °C and upper Tg of the Tg range;

h) between -40 °C and lower Tg of the Tg range;

i) between -40 °C and ambient temperature;

24. The method of Claim 20 wherein for polymers that predominately exhibit delamination-based failure during crimping the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between 80 °C and upper Tg of the Tg range;

h) between 80 °C and lower Tg of the Tg range; or

i) between 80 °C and ambient temperature.

25. The method of Claim 20 wherein for polymers that have a Tg above room temperature the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between -40 °C and upper Tg of the Tg range;

h) between -40 °C and lower Tg of the Tg range;

i) between -40 °C and ambient temperature;

26. The method of Claim 20 wherein for polymers that have a Tg above room temperature the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between 80 °C and upper Tg of the Tg range;

h) between 80 °C and lower Tg of the Tg range; or

i) between 80 °C and ambient temperature.

27. The method of Claim 20 wherein for polymers that have a Tg above ambient temperature the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between -40 °C and upper Tg of the Tg range;

h) between -40 °C and lower Tg of the Tg range;

i) between -40 °C and ambient temperature.

28. The method of Claim 20 wherein for polymers that have a Tg below ambient temperature the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg of the Tg range;

f) between ambient temperature and lower Tg of the Tg range;

g) between 80 °C and upper Tg of the Tg range;

h) between 80 °C and lower Tg of the Tg range; or

i) between 80 °C and ambient temperature.

29. The method of Claim 20 wherein for polymers that have a shore hardness of 60A to 80D the target temperature is within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination.

30. The method of Claim 20 wherein for polymers that have a shore hardness of 60A to 80D the target temperature is below ambient temperature.

31. The method of Claim 20 wherein for polymers that have a shore hardness of 60A to 80D the target temperature is at or below -40 °C.

32. The method of Claim 20 wherein for polymers that have a shore hardness of 60A to 80D the target temperature is between -40 °C and lower Tg of the Tg range.

33. The method of Claim 20 wherein for polymers that have a shore hardness of 60D to 95D the target temperature is within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination.

34. The method of Claim 20 wherein for polymers that have a shore hardness of 60D to 95D the target temperature is above ambient temperature.

35. The method of Claim 20 wherein for polymers that have a shore hardness of 60D to 95D the target temperature is at or above 80 °C.

36. The method of Claim 20 wherein for polymers that have a shore hardness of 60D to 95D the target temperature is between 80 °C and upper Tg of the Tg range.

37. The method of Claim 20 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination.

38. The method of Claim 20 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is below ambient temperature.

39. The method of Claim 20 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is at or below -40 °C.

40. The method of Claim 20 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is between ambient temperature and upper Tg of the Tg range.

41. The method of Claim 20 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is between -40 °C and upper Tg of the Tg range.

42. The method of Claim 20 wherein for polymers that predominately exhibit delamination-based failure during crimping the target temperature is within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination.

43. The method of Claim 20 wherein for polymers that predominately exhibit delamination-based failure during crimping the target temperature is above ambient temperature.

44. The method of Claim 20 wherein for polymers that predominately exhibit delamination-based failure during crimping the target temperature is at or above 80 °C;

45. The method of Claim 20 wherein for polymers that predominately exhibit delamination-based failure during crimping the target temperature is between 80 °C and upper Tg of the Tg range.

46. The method of Claim 20 wherein the target temperature is chosen to minimize deformation- or delamination-based failure during crimping.

47. The method of Claim 46 wherein Tg range of the polymer or polymer combination excludes ambient temperature.

48. The method of Claim 46 wherein Tg range of the polymer or polymer combination excludes ambient temperature plus or minus 1°C.

49. The method of Claim 46 wherein Tg range of the polymer or polymer combination excludes ambient temperature plus or minus 5°C.

50. The method of Claim 46 wherein target temperature is chosen to yield a change in shore hardness wherein:

a) the change is plus 50%; or

b) the change is minus 50%.

51. The method of Claim 50 wherein:

a) the change is plus 20%; or

b) the change is minus 20%.

52. The method of Claim 11 wherein adjusting the temperature comprises disposing the coating or coated piece in thermal contact with a heat sink or heat source.

53. The method of Claim 52 wherein adjusting the temperature comprises:

a) thermally contacting the coating or coated piece with a heat sink or heat source;

b) directing a heated or cooled gas at the coating or coated piece;

c) placing the coating or coated piece near a heated or cooled surface for emitting thermal or infrared radiation to or absorbing thermal or infrared radiation from the coating or coated piece;

d) placing the coating or coated piece near a heated or cooled surface to enable convection to or from the coating or coated piece to the surface;

e)

i) heating or cooling the jaws of the crimper; and

ii) thermally contacting the coating or coated piece with the crimper jaws;

f) for crimper jaws that allow the passage of infrared radiation, bathing the stent on catheter with infrared radiation; or

g) heating the stent on catheter in an incubator or oven, or cooling the stent on catheter in a refrigerator to pre-equilibrate the stent on catheter to the desired temperature before crimping.

54. The method of Claim 53 wherein adjusting the temperature comprises disposing the coating or coated piece in thermal contact with a heat sink or heat source.

55. The device of Claim 53 wherein the heat sink or heat source is integrated with a crimping device.

56. The method of Claim 21 wherein the heat sink or heat source is integrated with a crimping device.

57. A method of crimping a stent onto a delivery catheter or a balloon of the delivery catheter comprising:

a) positioning the stent on the catheter or the balloon; and

b) crimping the stent on the catheter or a balloon wherein crimping is done at a target temperature,

wherein the target temperature is other than ambient temperature.

58. The method of Claim 1 wherein the target temperature is

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

c) below ambient temperature;

d) below room temperature;

e) above ambient temperature;

f) above room temperature;

g) at or below -40 °C;

h) between ambient temperature and upper Tg;

i) between ambient temperature and lower Tg;

j) between -40 °C and upper Tg;

k) between -40 °C and lower Tg;

l) between -40 °C and ambient temperature;

m) at or above 80 °C;

n) between 80 °C and upper Tg;

o) between 80 °C and lower Tg; or

p) between 80 °C and ambient temperature.

59. The method of Claim 58 wherein the target temperature is

a) for polymers which have a shore hardness of 60A to 80D; predominately exhibit deformation-based failures during crimping; have a Tg above room temperature; or have a Tg above ambient temperature:

i) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

ii) below ambient temperature;

iii) below room temperature;

iv) at or below -40 °C;

v) between ambient temperature and upper Tg;

vi) between ambient temperature and lower Tg;

vii) between -40 °C and upper Tg;

viii) between -40 °C and lower Tg;

ix) between -40 °C and ambient temperature;

b) for polymers which have a shore hardness of 60D to 95D; predominately exhibits delamination-based failure during crimping; have a Tg above room temperature; or have a Tg below ambient temperature:

i) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

ii) above ambient temperature;

iii) above room temperature;

iv) at or above 80 °C;

v) between 80 °C and upper Tg;

vi) between 80 °C and upper Tg;

vii) between 80 °C and lower Tg;

viii) between 80 °C and lower Tg; or

ix) between 80 °C and ambient temperature.

60. The method of Claim 59 wherein for polymers that have a shore hardness of 60A to 80D the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg;

g) between -40 °C and upper Tg;

h) between -40 °C and lower Tg;

i) between -40 °C and ambient temperature;

61. The method of Claim 59 wherein for polymers that have a shore hardness of 60D to 95D the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg

g) between 80 °C and upper Tg;

h) between 80 °C and lower Tg; or

i) between 80 °C and ambient temperature.

62. The method of Claim 59 wherein for polymers that predominately exhibit deformation-based failures during crimping the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg;

g) between -40 °C and upper Tg;

h) between -40 °C and lower Tg;

i) between -40 °C and ambient temperature;

63. The method of Claim 59 wherein for polymers that predominately exhibit delamination-based failure during crimping the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg

g) between 80 °C and upper Tg;

h) between 80 °C and lower Tg; or

i) between 80 °C and ambient temperature.

64. The method of Claim 59 wherein for polymers that have a Tg above room temperature the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg;

g) between -40 °C and upper Tg;

h) between -40 °C and lower Tg;

i) between -40 °C and ambient temperature;

65. The method of Claim 59 wherein for polymers that have a Tg above room temperature the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg

g) between 80 °C and upper Tg;

h) between 80 °C and lower Tg; or

i) between 80 °C and ambient temperature.

66. The method of Claim 59 wherein for polymers that have a Tg above ambient temperature the target temperature is:

a) within or below the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) below ambient temperature;

c) below room temperature;

d) at or below -40 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg;

g) between -40 °C and upper Tg;

h) between -40 °C and lower Tg;

i) between -40 °C and ambient temperature.

67. The method of Claim 59 wherein for polymers that have a Tg below ambient temperature the target temperature is:

a) within or above the range defined by definition 1, definition 2, definition 3, definition 4, definition 5, definition 6, or definition 7 of the Tg range of the polymer or polymer combination;

b) above ambient temperature;

c) above room temperature;

d) at or above 80 °C;

e) between ambient temperature and upper Tg;

f) between ambient temperature and lower Tg

g) between 80 °C and upper Tg;

h) between 80 °C and lower Tg; or

i) between 80 °C and ambient temperature.

68. The method of Claim 60-67 wherein the target temperature is chosen to minimize deformation- or delamination-based failure during crimping.

69. The method of Claim 68 wherein Tg range of the polymer or polymer combination excludes ambient temperature plus or minus 5°C.

70. The method of Claim 68 wherein Tg range of the polymer or polymer combination excludes ambient temperature.

71. The method of Claim 68 wherein Tg range of the polymer or polymer combination excludes ambient temperature plus or minus 1°C.

72. The method of Claim 68 wherein target temperature is chosen to yield a change in shore hardness wherein:

a) the change is plus 50%; or

b) the change is minus 50%.

73. The method of Claim 68 wherein:

a) the change is plus 20%; or

b) the change is minus 20%.

74. A coating for a medical device made using the method of Claim 11.

75. A device for crimping stents onto delivery catheters or balloons that has a crimping means wherein the improvement comprises a heating or cooling means integral with or adjacent to the crimping means.